STEVEN L. BESHEAR
GOVERNOR

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

LEONARD K. PETERS
SECRETARY

FACT SHEET

KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT TO DISCHARGE TREATED WASTEWATER
INTO WATERS OF THE COMMONWEALTH

KPDES No.: KY0002666 **Permit Writer:** Sara Beard **Date:** October 5, 2009
AI No.: 1622

1. SYNOPSIS OF APPLICATION

a. Name and Address of Applicant

Commonwealth Aluminum Lewisport, LLC
1372 State Road 1957
Lewisport, Kentucky 42351

b. Facility Location

Commonwealth Aluminum Lewisport, LLC
1372 State Road 1957
Lewisport, Hancock County, Kentucky

c. Description of Applicant's Operation

Commonwealth Aluminum Lewisport processes include cleaning and processesing of scrap aluminum (SIC Code 3341), casting aluminum ingots, cold and hot roll of mill products (SIC Codes 3353), and coil coating of aluminum sheet (SIC Code 3479).

d. Production Capacity of Facility

Coil Coating Process - 2,000,000 ft^2/day

Direct Chill Casting - 3,300,000 lbs/day

Rolling with Emulsions - 2,500,000 lbs/day

e. Description of Existing Pollution Abatement Facilities

Outfall 001 - No additional treatment is provided to the combined wastewaters of coil coating (Internal Outfall 002), non-contact cooling (Internall Outfalls 003, 004, 005, 010, and 011), storm water runoff (Internal Outfall 006), sanitary (Internal Outfall 007), direct chill casting (Internal Outfall 008), and direct chill casting and hot line waters (Internal Outfall 012).

1. SYNOPSIS OF APPLICATION - continued

e. Description of Existing Pollution Abatement Facilities - continued

Outfall 002 - The coil coating wastes are treated by neutralization, flocculation, settling, and chlorine disinfection prior to commingling with the wastewaters of Outfall 001.

Outfall 003 - No treatment of non-contact cooling waters (industrial mill watertower spillover) prior to commingling with the wastewaters of Outfall 001.

Outfall 004 - No treatment of non-contact cooling waters, Reverse Osmosis/Boiler Process blowdown, and storm water runoff prior to commingling with the wastewaters of Outfall 001.

Outfall 005 - The non-contact cooling waters of the Annealing Furnace are recycled prior to commingling with the wastewaters of Outfall 001.

Outfall 006 - Plant storm water runoff from the south areas of the site are treated in an oil/water separation unit prior to commingling with the wastewaters of Outfall 001.

Outfall 007 - The sanitary wastewaters from the Wastewater Treatment Facility are treated by grinding, activated sludge, filtration, and chlorine disinfection prior to commingling with the wastewaters of Outfall 001.

Outfall 008 - The direct chill casting waters from the North Casthouse are treated by flotation, flocculation, and chlorine disinfection prior to commingling with the wastewaters of Outfall 001.

Outfall 010 - No treatment of non-contact cooling waters from the North Casting House and Metal Preparation and storm water runoff from scrap metal storage area prior to commingling with the wastewaters of Outfall 001.

Outfall 011 - No treatment of non-contact cooling waters and condensate prior to commingling with the wastewaters of Outfall 001.

Outfall 012 - The direct chill casting waters from the Souh Casthouse and hot line waters are treated by an oil/water separation unit prior to commingling with the wastewaters of Outfall 001.

f. Permitting Action

This permitting action involves a reissuance of a major KPDES permit for an existing source aluminum mill.

2. RECEIVING WATERS

a. Receiving Water Name

Outfall 001 discharges to Thrasher Creek at the following coordinates: N 37° 56′ 40″, W 86° 51′ 15″ (mile point 2.6).

Outfalls 002 through 008 and 010 through 012 are internal discharges to Outfall 001.

b. Stream Segment Use Classifications

Thrasher Creek is classified as a Warmwater Aquatic Habitat, Primary Contact Recreation, Secondary Contact Recreation, and Domestic Water Supply.

c. Stream Segment Antidegradation Categorization

This segment of Thrasher Creek is categorized as a High Quality Water.

d. Stream Low Flow Condition

At the point of discharge, the 7Q10 and the Harmonic Mean for Austin Creek are 0.00 and 0.20 cfs, respectively.

3. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge - Outfall 001 - No additional treatment is provided to the combined wastewaters of coil coating (Internal Outfall 002), non-contact cooling (Internall Outfalls 003, 004, 005, 010, and 011), storm water runoff (Internal Outfall 006), sanitary (Internal Outfall 007), direct chill casting (Internal Outfall 008), and direct chill casting and hot line waters (Internal Outfall 012).

Effluent Characteristics	Reported Discharge Monthly Average	Reported Discharge Daily Maximum	Proposed Limits Monthly Average	Proposed Limits Daily Maximum	Applicable Water Quality Criteria and/or Effluent Guidelines
Flow (MGD)	8.32	9.02	Report	Report	401 KAR 5:065, Section 2(8)
Precipitation (inches)	0.15	1.51	Report	Report	401 KAR 5:065, Section 2(8)
Total Suspended Solids (lbs/day)	347	547	1,001	1,840	401 KAR 5:065, Sections 4 and 5 401 KAR 5:080, Section 1(2)(c)2 401 KAR 10:031, Section 4 401 KAR 5:045, Sections 2 and 3
Oil & Grease (lbs/day)	231	887	238	453	401 KAR 5:065, Sections 4 and 5 401 KAR 5:080, Section 1(2)(c)2
Total Recoverable Chromium (lbs/day)	BDL	BDL	0.92	2.26	401 KAR 5:065, Sections 4 and 5
Total Cyanide (lbs/day)	0.23	0.46	0.62	1.50	401 KAR 5:065, Sections 4 and 5
Total Recoverable Zinc (lbs/day)	1.04	3.69	3.11	7.42	401 KAR 5:065, Sections 4 and 5
Total Recoverable Aluminum (lbs/day)	6.44	11.15	15.86	32.16	401 KAR 5:065, Sections 4 and 5
Hardness (as mg/l $CaCO_3$)	208	215	Report	Report	401 KAR 5:065, Section 2(8)
Chronic Toxicity (TU_c)	N/R	< 1.00	N/A	1.00	401 KAR 10:029, Section 5 401 KAR 10:031, Sections 1 and 4
Total Residual Chlorine (mg/l)	0.013	0.019	0.011	0.019	401 KAR 10:031, Section 4
Temperature (^oC)	22.6	23.6	Report	31.7	401 KAR 10:031, Section 4
pH (standard units)	6.5(min)	9.5(max)	6.0(min)	9.0(max)	401 KAR 5:065, Sections 4 and 5 401 KAR 10:031, Section 4

The data contained under the reported discharge columns is from the analysis of the Discharge Monitoring Reports (DMRs) data that has been reported during the term of the current permit.

The abbreviation N/R means not reported on the Discharge Monitoring Report (DMR).

The abbreviation N/A means not applicable.

The abbreviation BDL means Below Detection Level.

4. METHODOLOGY USED IN DETERMINING LIMITATIONS

a. Serial Number

Outfall 001 - No additional treatment is provided to the combined wastewaters of coil coating (Internal Outfall 002), non-contact cooling (Internall Outfalls 003, 004, 005, 010, and 011), storm water runoff (Internal Outfall 006), sanitary (Internal Outfall 007), direct chill casting (Internal Outfall 008), and direct chill casting and hot line waters (Internal Outfall 012).

b. Effluent Characteristics

Flow	Precipitation	Total Suspended Solids
Oil & Grease	Total Recoverable Chromium	Total Cyanide
Total Recoverable Zinc	Total Recoverable Aluminum	Hardness
Chronic Toxicity	Total Residual Chlorine	Temperature
pH		

c. Pertinent Factors

The coil coating operation is an existing source subject to the requirements of 40 CFR 465 – Coil Coating Point Source Category. The specific requirements include the “Best Practicable Technology Currently Available” (BPT – 465.31) and the “Best Available Technology Economically Achievable” (BAT – 465.32) in the Subpart C - Aluminum Basis Material.

The direct chill casting and rolling operations are existing sources subject to the requirements of 40 CFR 467 – Aluminum Forming Point Source Category. The specific requirements include the “Best Practicable Technology Currently Available” (BPT – 467.22) and the “Best Available Technology Economically Achievable” (BAT – 467.23) in the Subpart B – Rolling with Emulsions.

A summarization of the effluent guidelines, water quality standards, assumptions, and calculations can be found in Attachment A – Regulatory Requirements and Attachment B - Steady State Toxics Wasteload Allocation Model (SSTWAM2004) – Reasonable Potential Analysis.

d. Monitoring Requirements

Flow shall be monitored instantaneously twice per month.

Precipitation shall be monitored continuously by recorder.

Total Suspended Solids, Total Recoverable Chromium, Total Recoverable Zinc, and Total Recoverable Aluminum shall be monitored twice per month by 24-hour composite sample.

Oil & Grease, Total Cyanide, Temperature, Total Residual Chlorine, Hardness, and pH shall be monitored twice per month by grab sample.

Chronic Toxicity shall be monitored once per quarter by a minimum of three (3) 24-hour composite samples collected every other day.

e. Justification of Limits

The Kentucky Administrative Regulations (KARs) cited below have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes (KRSs).

4. METHODOLOGY USED IN DETERMINING LIMITATIONS - continued

Flow, Precipitation, and Hardness
The monitoring requirements for these parameters are consistent with the requirements of 401 KAR 5:065, Section 2(8).

Total Recoverable Chromium, Total Cyanide, Total Recoverable Aluminum, and Total Recoverable Zinc
The limits for these parameters are consistent with the requirements of 401 KAR 5:065, Sections 4 and 5. These limits are representative of the "Best Practicable Technology Currently Available" (BPT) and the "Best Available Technology Economically Achievable" (BAT) requirements for aluminum coil coating (40 CFR 465.31 and 465.32) and rolling with emulsions (40 CFR 467.22 and 467.23 – Core and Direct Chill Casting Contact Cooling Water).

Total Suspended Solids and Oil & Grease
The limits for these parameters are consistent with the requirements of 401 KAR 5:065, Sections 4 and 5 and 401 KAR 5:080, Section 1(2)(c)2. These limits are representative of the "Best Practicable Technology Currently Available" (BPT) and the "Best Available Technology Economically Achievable" (BAT) requirements for aluminum coil coating (40 CFR 465.31 and 465.32), rolling with emulsions (40 CFR 467.22 and 467.23 – Core and Direct Chill Casting Contact Cooling Water), and the Division of Water's "Best Professional Judgement" (BPJ) for miscellaneous allowances for the commingling of wastestreams not covered by effluent guidelines. Section 4 of 10:031 establishes water quality criteria for the protection of Kentucky's waters. Sections 2 and 3 of 5:045 require biochemically degradable wastewaters to receive secondary treatment.

pH
The limits for this parameter are consistent with the requirements of 401 KAR 10:031, Section 4 (Kentucky Water Quality Standards) and the "Best Practicable Technology Currently Available" (BPT) and the "Best Available Technology Economically Achievable" (BAT) requirements for aluminum coil coating (40 CFR 465.31 and 465.32) and rolling with emulsions (40 CFR 467.22 and 467.23 – Core and Direct Chill Casting Contact Cooling Water).

Total Residual Chlorine and Temperature
The limits for these parameters are consistent with the requirements of 401 KAR 10:031, Section 4

Chronic Toxicity
The requirements for this parameter are consistent with the requirements of 401 KAR 10:029, Section 5 and 401 KAR 10:031, Sections 1 and 4.

5. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge - Outfall 007 (Internall Outfall) – The sanitary wastewaters from the Wastewater Treatment Facility are treated by grinding, activated sludge, filtration, and chlorine disinfection prior to commingling with the wastewaters of Outfall 001.

Effluent Characteristics	Reported Discharge Monthly Average	Reported Discharge Daily Maximum	Proposed Limits Monthly Average	Proposed Limits Daily Maximum	Applicable Water Quality Criteria and/or Effluent Guidelines
Flow (MGD)	0.18	0.22	Report	Report	401 KAR 5:065, Section 2(8)
$CBOD_5$ (mg/l)	2.85	3.21	30	45	401 KAR 10:031, Section 4 401 KAR 5:045, Sections 2 and 3
Total Suspended Solids (mg/l)	16.3	18.9	30	45	401 KAR 10:031, Section 4 401 KAR 5:045, Sections 2 and 3
Total Residual Chlorine (mg/l)	0.90	0.91	N/R	5.0 (min)	401 KAR 5:080, Section 1(2)(c)2)

The data contained under the reported discharge columns is from the analysis of the Discharge Monitoring Reports (DMRs) data that has been reported during the term of the current permit.

The abbreviation $CBOD_5$ means Carbonaceous Biochemical Oxygen Demand, 5-day.

6 METHODOLOGY USED IN DETERMINING LIMITATIONS

a. Serial Number

Outfall 007 (Internall Outfall) – The sanitary wastewaters from the Wastewater Treatment Facility are treated by grinding, activated sludge, filtration, and chlorine disinfection prior to commingling with the wastewaters of Outfall 001.

b. Effluent Characteristics

Flow $CBOD_5$
Total Suspended Solids Total Residual Chlorine

c. Pertinent Factors

On September 8, 2004 Kentucky's revised water quality standards, 401 KAR 10:031 became effective.

d. Monitoring Requirements

Flow shall be monitored instantaneously once per month.

Total Suspended Solids and $CBOD_5$ shall be monitored once per month by 24-hour composite sample.

Total Residual Chlorine shall be monitored once per month by grab sample.

e. Justification of Limits

The Kentucky Administrative Regulations (KARs) cited below have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes (KRSs).

Internal Monitoring Requirement
Section 3(8) of 401 KAR 5:065 authorizes the establishment of internal monitoring points to ensure compliance with applicable treatment requirements, which when commingling with other wastestreams will prevent measuring compliance.

Flow
The monitoring requirements for these parameters are consistent with the requirements of 401 KAR 5:065, Section 2(8).

Total Suspended Solids and $CBOD_5$
The limits for these parameters are consistent with the requirements of 401 KAR 10:031, Section 4 and 5:045, Sections 2 and 3. Section 4 of 10:031 establishes water quality criteria for the protection of Kentucky's waters. Sections 2 and 3 of 5:045 require biochemically degradable wastwaters to receive secondary treatment.

Total Residual Chlorine
In the previous permit renewal, the limit for Fecal Coliform Bacteria was removed and a minimum limit for Total Residual Chlorine took its place. The holding time for the Fecal Coliform test is only six hours. Due to the nature of Outfall 007 (internal wastestream that commingles with the much larger flows of process, non-contact cooling waters, and stormwater runoff before ultimate discharge), the facility does not conduct this test on site. It is the Division of Water's "Best Professional Judgment" (BPJ) determination that removal of Fecal Coliform Bacteria and the imposisiotn of a minimum Total Residual Chlorine level will ensure adequate disinfection of the sanitary wastewater.

7. ANTIDEGRADATION

The development of this permit commenced prior to the April 12, 2005 EPA approval of Kentucky's Antidegradation Regulation promulgated on September 8, 2004. Therefore, previous antidegradation requirements are applicable. The conditions of 401 KAR 10:029, Section 1 have been satisfied by this permit action. A review under 401 KAR 10:030 Section 1 is not applicable.

8. PROPOSED COMPLIANCE SCHEDULE FOR ATTAINING EFFLUENT LIMITATIONS

Permittee shall comply with the effluent limitations by the effective date of the permit.

9. PROPOSED SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE DISCHARGE

Cooling Water Additives, FIFRA, and Mollusk Control
The discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) in cooling water which ultimately may be released to the waters of the Commonwealth is prohibited, except Herbicides, unless specifically identified and authorized by the KPDES permit. In the event the permittee needs to use a biocide or chemical not previously reported for mollusk control or other purpose, the permittee shall submit sufficient information, a minimum of thirty (30) days prior to the commencement of use of said biocides or chemicals, to the Division of Water for review and establishment of appropriate control parameters. Such information requirements shall include:

1. Name and general composition of biocide or chemical,
2. Any and all aquatic organism toxicity data,
3. Quantities to be used,
4. Frequencies of use,
5. Proposed discharge concentrations, and
6. EPA registration number, if applicable.

Best Management Practices (BMP) Plan
Pursuant to 401 KAR 5:065, Section 2(10), a BMP requirement shall be included: to control or abate the discharge of pollutants from ancillary areas containing toxic or hazardous substances or those substances which could result in an environmental emergency; where numeric effluent limitations are infeasible; or to carry out the purposes and intent of KRS 224. The facility has several areas where support activities occur which have a potential of the discharge of such substances through storm water runoff or spillage. Some of these areas will drain to present wastewater treatment plants, others will not.

Outfall Signage
It is the Best Professional Judgment of the Division of Water, 401 KAR 5:080, Section 1(2)(c)2, that all permittees post a marker at all discharge locations and/or monitoring points. The marker shall be at least 2 feet by 2 feet in size and a minimum of 3 feet above ground level with the Permittee Name and KPDES permit and outfall numbers in 2 inch letters. For internal monitoring points the marker shall be of sufficient size to include the outfall number in 2 inch letters and is to be posted as near as possible to the actual sampling location.

10. PERMIT DURATION

Five (5) years. This facility is in the Tradewater/Green Basin Management Unit as per the Kentucky Watershed Management Framework.

11. PERMIT INFORMATION

The application, draft permit fact sheet, public notice, comments received, and additional information is available by writing the Division of Water at 200 Fair Oaks Lane, Frankfort, Kentucky 40601.

12. REFERENCES AND CITED DOCUMENTS

All material and documents referenced or cited in this fact sheet are, a part of the permit information as described above and are readily available at the Division of Water Central Office. Information regarding these materials may be obtained from the person listed below.

13. CONTACT

For further information contact the individual identified on the Public Notice or the Permit Writer – Sara Beard at (502) 564-3410, extension 4925 or e-mail Sara.Beard@ky.gov.

14. PUBLIC NOTICE INFORMATION

Please refer to the attached Public Notice for details regarding the procedures for a final permit decision, deadline for comments, and other information required by 401 KAR 5:075, Section 4(2)(e).

ATTACHMENT A - REGULATORY REQUIREMENTS

EFFLUENT GUIDELINES

The facility is an "Existing Source" subject to the requirements of Subpart C of 40 CFR Part 465 – Coil Coating Point Source Category and Subpart B of 40 CFR Part 467 – Aluminum Forming Point Source Category. Specifically, the "Best Practicable Control Technology Currently Available" (BPT) and the "Best Available Technology Economically Achievable" (BAT) for the: Aluminum Basis Material Subcategory (40 CFR 465.31 and 465.32) and Rolling With Emulsions Subcategory (40 CFR 467.22 and 467.23).

PART 465 — COIL COATING POINT SOURCE CATEGORY

Subpart C — Aluminum Basis Material Subcategory

Subsection 465.30 – Applicability; description of the aluminum basis material subcategory

This subpart applies to discharges to waters of the United States and introductions of pollutants into publicly owned treatment works from coil coating of aluminum basis material coils.

Subsection 465.31 - Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available:

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Maximum for monthly average
	lb/million ft^2 of area processed	
Chromium	0.29	0.12
Cyanide	0.20	0.083
Zinc	0.92	0.39
Aluminum	3.14	1.28
Oil & Grease	13.8	8.27
TSS	28.3	13.8
pH	Within the range of 7.5 to 10.0 at all times	

Subsection 465.32 - Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable:

EFFLUENT GUIDELINES – continued

Pollutant or pollutant property	BAT effluent limitations	
	Maximum for any 1 day	Maximum for monthly average
	lb/million ft^2 of area processed	
Chromium	0.085	0.034
Cyanide	0.059	0.024
Zinc	0.27	0.12
Aluminum	0.92	0.38

PART 467 — ALUMINUM FORMING POINT SOURCE CATEGORY

Subpart B — Rolling With Emulsions Subcategory

Subsection 467.20 - Applicability; description of the rolling with emulsions subcategory.

This subpart applies to dischargers of pollutants to waters of the United States and introductions of pollutants into publicly owned treatment works from the core and the ancillary operations of the rolling with emulsions subcategory.

Subsection 467.21 - Specialized definitions.

For the purpose of this subpart:

(a) The “core” of the rolling with emulsions subcategory shall include rolling using emulsions, roll grinding, stationary casting, homogenizing, artificial aging, annealing, and sawing.

(b) The term “ancillary operation” shall mean any operation not previously included in the core, performed on-site, following or preceding the rolling operation. The ancillary operations shall include direct chill casting, solution heat treatment, cleaning or etching, and degassing.

Subsection 467.22 - Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

EFFLUENT GUIDELINES – continued

Core

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Maximum for monthly average
	lb/million off-lbs of aluminum rolled with emulsions	
Chromium	0.057	0.024
Cyanide	0.038	0.016
Zinc	0.19	0.079
Aluminum	0.84	0.416
Oil & Grease	2.60	1.56
TSS	5.33	2.53
pH	Within the range of 7.0 to 10.0 at all times	

Direct Chill Casting Contact Cooling Water

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Maximum for monthly average
	lb/million off-lbs of aluminum cast	
Chromium	0.59	0.24
Cyanide	0.39	0.16
Zinc	1.94	0.81
Aluminum	8.55	4.26
Oil & Grease	26.58	15.95
TSS	54.49	25.92
pH	Within the range of 7.0 to 10.0 at all times except for those situations when this waste stream is discharged separately and without commingling with any other wastewater in which case the pH shall be within the range of 6.0 to 10.0 at all times	

Subsection - 467.23 - Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable. The discharge of process wastewater pollutants from the core shall not exceed the values set forth below:

EFFLUENT GUIDELINES – continued

Core

Pollutant or pollutant property	BAT effluent limitations	
	Maximum for any 1 day	Maximum for monthly average
	lb/million off-lbs of aluminum rolled with emulsions	
Chromium	0.057	0.024
Cyanide	0.038	0.016
Zinc	0.19	0.079
Aluminum	0.84	0.42

Direct Chill Casting Contact Cooling Water

Pollutant or pollutant property	BAT effluent limitations	
	Maximum for any 1 day	Maximum for monthly average
	lb/million off-lbs of aluminum cast	
Chromium	0.59	0.24
Cyanide	0.39	0.16
Zinc	1.94	0.81
Aluminum	8.55	4.26

WATER QUALITY CRITERIA

401 KAR 10:031 – Warm Water Aquatic Habitat

Pollutant or pollutant property				
	Acute Criteria	Chronic Criteria	Human Health Fish Consumption	Human Health Domestic Water Supply
Total Recoverable Chromium	None	None	None	0.10 mg/l
Total Cyanide	None	None	None	None
Total Recoverable Zinc	$e^{(0.8473*(\ln \text{Hardness})+0.884)}$	$e^{(0.8473*(\ln \text{Hardness})+0.884)}$	26 mg/l	7.4 mg/l
Total Recoverable Aluminum	None	None	None	None

401 KAR 5:045, Section 3 – Secondary Treatment

Pollutant or Pollutant Characteristic	Maximum Concentration (mg/l)	Average Concentration (mg/l)
Total Suspended Solids	45	30

WATER QUALITY CRITERIA – continued

401 KAR 5:080, SECTION 1(2)(c)2 – BEST PROFESSIONAL JUGEMENT

For concentrations in Non-Contact Cooling Water:

Pollutant or Pollutant Characteristic	Maximum Concentration (mg/l)	Average Concentration (mg/l)
Total Suspended Solids	15	7.5
Oil & Grease	5.0	2.5

For concentrations in Non-Contact Cooling Water, Reverse Osmosis/Boiler Process Blowdown, and Storm Water Runoff:

Pollutant or Pollutant Characteristic	Maximum Concentration (mg/l)	Average Concentration (mg/l)
Total Suspended Solids	50	30
Oil & Grease	N/A	N/A

For concentrations in Storm Water Runoff:

Pollutant or Pollutant Characteristic	Maximum Concentration (mg/l)	Average Concentration (mg/l)
Total Suspended Solids	50	30
Oil & Grease	N/A	N/A

For concentrations in Sanitary Wastewater

Pollutant or Pollutant Characteristic	Maximum Concentration (mg/l)	Average Concentration (mg/l)
Total Suspended Solids	N/A	N/A
Oil & Grease	5.0	2.5

LIMITS CALCULATION

EFFLUENT GUIDELINES

The final effluent limitations required by the effluent guidelines are a summation of the component contributions.

The following formulas were used to calculate the contribution from each source:

$$\text{Monthly Average} = \sum \left[(\text{Production Rate}) \text{ x } (\text{Monthly Average Factor}) \right]$$

$$\text{Daily Maximum} = \sum \left[(\text{Production Rate}) \text{ x } (\text{Daily Maximum Factor}) \right]$$

Production Rates:
Coil Coating Process – 2.0 x 10^6 ft^2/day
Direct Chill Casting – 3.3 x 10^6 lbs/day
Rolling with Emulsions – 2.5 x 10^6 lbs/day

The following tables are a summarization of these calculations.

Pollutant or pollutant property	40 CFR 465.31 – BPT – Coil Coating (2.0 x 10^6 ft^2/day)	
	Daily Maximum (lbs/day)	Monthly Average (lbs/day)
Chromium	0.580	0.240
Cyanide	0.400	0.166
Zinc	1.840	0.780
Aluminum	6.280	2.560
Oil & Grease	**27.600**	**16.540**
Suspended Solids	**56.600**	**27.600**

Pollutant or pollutant property	40 CFR 465.32 – BAT – Coil Coating (2.0 x 10^6 ft^2/day)	
	Daily Maximum (lbs/day)	Monthly Average (lbs/day)
Chromium	**0.170**	**0.068**
Cyanide	**0.118**	**0.048**
Zinc	**0.540**	**0.240**
Aluminum	**1.840**	**0.760**

LIMITS CALCULATIONS - EFFLUENT GUIDELINES – continued

Pollutant or pollutant property	40 CFR 467.22 – BPT – Core ($2.5*10^6$ lbs/day)	
	Daily Maximum (lbs/day)	Monthly Average (lbs/day)
Chromium	0.143	0.060
Cyanide	0.095	0.040
Zinc	0.475	0.198
Aluminum	2.100	1.040
Oil & Grease	**6.500**	**3.900**
Suspended Solids	**13.325**	**6.325**

Pollutant or pollutant property	40 CFR 467.22 – BPT – Direct Chill Casting ($3.3*10^6$ lbs/day)	
	Daily Maximum (lbs/day)	Monthly Average (lbs/day)
Chromium	1.947	0.792
Cyanide	1.287	0.528
Zinc	6.402	2.673
Aluminum	28.215	14.058
Oil & Grease	**87.714**	**52.635**
Suspended Solids	**179.817**	**85.536**

Pollutant or pollutant property	40 CFR 467.23 – BAT – Core ($2.5*10^6$ lbs/day)	
	Daily Maximum (lbs/day)	Monthly Average (lbs/day)
Chromium	**0.143**	**0.060**
Cyanide	**0.095**	**0.040**
Zinc	**0.475**	**0.198**
Aluminum	**2.100**	**1.040**

Pollutant or pollutant property	40 CFR 467.23 – BAT – Direct Chill Casting ($3.3*10^6$ lbs/day)	
	Daily Maximum (lbs/day)	Monthly Average (lbs/day)
Chromium	**1.947**	**0.792**
Cyanide	**1.287**	**0.528**
Zinc	**6.402**	**2.673**
Aluminum	**28.215**	**14.058**

LIMITS CALCULATIONS - EFFLUENT GUIDELINES – continued

Pollutant or pollutant property	Total Effluent Guideline Limitations	
	Daily Maximum (lbs/day)	Monthly Average (lbs/day)
Chromium	2.26	0.92
Cyanide	1.50	0.62
Zinc	7.42	3.11
Aluminum	32.16	15.86
Oil & Grease	121.81	73.08
Suspended Solids	249.74	119.46

WATER QUALITY - See SSTWAM 2004 attachment for calculations

SECONDARY TREATMENT

Sanitary Wastewater Component:
Monthly Average = Flow (MGD) x 8.345 x Secondary Treatment Monthly Average
Daily Maximum = Flow (MGD) x 8.345 x Secondary Treatment Daily Maximum

Where:
Flow = 0.036 MGD
8.345 = Conversion Factor

Pollutant or Pollutant Characteristic	Maximum Concentration (lbs/day)	Average Concentration (lbs/day)
Total Suspended Solids	13.52	9.01

BEST PROFESSIONAL JUGEMENT

To calculate the flows for the remaining contributing discharges, the following formulas will be used.

Monthly Average = Flow (MGD) x 8.345 x Monthly Average
Daily Maximum = Flow (MGD) x 8.345 x Daily Maximum

Where:
Flows = 5.875 MGD (combined Non-Contact Cooling Water from Internal Outfalls 003, 005, 010, and 011)
0.288 MGD (Non-Contact Cooling Water, Reverse Osmosis/Boiler Process Blowdown, and Stormwater Runoff from Internall Outfall 004)
1.728 MGD (Stormwater Runoff from Internall Outfall 006)
0.036 MGD (Sanitary Wastewater from Internall Outfall 007)
8.345 = Conversion Factor

LIMITS CALCULATIONS – WATER QUALITY – continued

Pollutant or pollutant property	Total Suspended Solids		Oil & Grease	
	Daily Maximum (lbs/day)	Monthly Average (lbs/day)	Daily Maximum (lbs/day)	Monthly Average (lbs/day)
Non-Contact Cooling Water	735.43	367.71	245.14	122.57
Non-Contact Cooling Water, Reverse Osmosis, Stormwater Runoff	120.17	72.10	12.02	6.01
Stormwater Runoff	721.01	432.60	72.10	36.05
Sanitary Wastewater	N/A	N/A	1.50	0.75
Total Contribution	**1,576.61**	**872.41**	**330.76**	**165.38**

TOTAL EFFLUENT LIMITATIONS – Oufall 001

Pollutant or pollutant property	Total Effluent Limitations	
	Daily Maximum (lbs/day)	Monthly Average (lbs/day)
Chromium	2.26	0.92
Cyanide	1.50	0.62
Zinc	7.42	3.11
Aluminum	32.16	15.86
Oil & Grease	452.57	238.46
Total Suspended Solids	1,839.87	1,000.88

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Permit Writer	Sara Beard	
Date Entered	9/9/2009	
Facility Name	Commonwealth Aluminum Lewisport	
KPDES Number	KY0002666	
Outfall Number	001	
Case	Reissuance	
Status: **Is this an existing facility – Enter "E"** **Is this an existing facility with an increase in pollutant load – Enter "I"** **Is this a new facility – Enter "N"** **Is this a regional facility with an approved up-to-date 201 plan – Enter "R"** **Has the permittee made a successful alternatives analysis/socioeconomic demonstration – Enter "A"**	E	
Receiving Water Name	Thrasher Creek	
Discharge Mile Point	2.6	
Public Water Supply Name	City of Owensboro	
Intake Water Name	Ohio River	
Intake Mile Point		
Total Effluent Flow (Q_T)	9.4	MGD
Receiving Water 7Q10 (Q_{RW7Q10})	0.00	cfs
Receiving Water Harmonic Mean (Q_{RWHM})	0.20	cfs
Receiving Water pH	7.50	SU
Receiving Water Temperature	20.00	^{o}C
Intake Water 7Q10 (Q_{IW7Q10})	13000.00	cfs
Intake Water Harmonic Mean (Q_{IWHM})	65010.00	cfs
Effluent Hardness	215	(as mg/l CaCO3)
Receiving Water Hardness	100	(as mg/l CaCO3)
Zone of Initial Dilution (ZID)	1.00	
Mixing Zone (MZ)	0.000	
Acute to Chronic Ratio (ACR)	0.1	
Impaired	No	
Permittee agrees to accept no mixing zone for bioaccumulative or persistent pollutants prior to 09/08/2014	Yes	

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Calculation Methodology

Definitions

Acute to Chronic Ratio	ACR	Total Effluent Flow	Q_T
Aquatic Life Acute Criteria	C_A	Receiving Water 7Q10	Q_{RW7Q10}
Aquatic Life Chronic Criteria	C_C	Receiving Water Harmonic Mean	Q_{RWHM}
Human Health Criteria - Fish Only	C_{HHFO}	Intake Water 7Q10	Q_{IW7Q10}
Human Health Criteria - Fish & Water	C_{HHFW}	Intake Water Harmonic Mean	Q_{IWHM}
End of Pipe Effluent Limit	C_T	Zone of Initial Dilution	ZID
Instream Background Concentration	C_U	Mixing Zone	MZ
Toxicity Units - Acute	TU_a	Toxicity Units - Chronic	TU_c
Effluent Hardness	H_T	Receiving Water Hardness	H_{RW}

Aquatic Life - Chemical Specific

Acute
NO ZID given $C_T = C_A$
ZID given $C_T = (C_A - C_U) \times (ZID)$

Chronic Mixing Zone / Complete Mix
$C_T = \{C_C[Q_T + (MZ)(Q_{RW7Q10})] - [C_U(MZ)(Q_{RW7Q10})]\}/Q_T$

Human Health - Chemical Specific

Fish Only: Mixing Zone / Complete Mix
Carcinogen / Non-Carcinogen $C_T = \{C_{HHFO}[Q_T + (MZ)(Q_{RWHM})] - C_U(MZ)(Q_{RWHM})\}/Q_T$

Fish & Water Only: Mixing Zone / Applicable at point of withdrawal
Carcinogen $C_T = \{C_{HHFW}[Q_T + (Q_{IWHM})] - C_U(Q_{IWHM})\}/Q_T$
Non-Carcinogen $C_T = \{C_{HHFW}[Q_T + (Q_{IW7Q10})] - C_U(Q_{IW7Q10})\}/Q_T$

Aquatic Life - Whole Effluent Toxicity

Acute (Units TU_a)
NO ZID given CT = CA
ZID given $C_T = (C_A - C_U) \times (ZID)$

Chronic Mixing Zone / Complete Mix (Units TUc)
$C_T = \{C_C[Q_T + (MZ)(Q_{RW7Q10})] - [C_U(MZ)(Q_{RW7Q10})]\}/Q_T$
Conversion of TU_c to TU_a: $TU_c \times ACR = TU_a$

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Metal Aquatic Criteria

Pollutant	Acute Criteria	Chronic Criteria
Total Recoverable Cadmium	$e^{(1.0166\ (\ln\ Hardness)\ -\ 3.924)}$	$e^{(0.7409\ (\ln\ Hardness)\ -\ 4.719)}$
Chromium III	$e^{(0.8190\ (\ln\ Hardness)\ +\ 3.7256)}$	$e^{(0.8190\ (\ln\ Hardness)\ +\ 0.6848)}$
Total Recoverable Copper	$e^{(0.9422\ (\ln\ Hardness)\ -\ 1.700)}$	$e^{(0.8545\ (\ln\ Hardness)\ -\ 1.702)}$
Total Recoverable Lead	$e^{(1.273\ (\ln\ Hardness)\ -\ 1.460)}$	$e^{(1.273\ (\ln\ Hardness)\ -\ 4.705)}$
Total Recoverable Nickel	$e^{(0.8460\ (\ln\ Hardness)\ +\ 2.255)}$	$e^{(0.8460(\ln\ Hardness)\ +\ 0.0584)}$
Total Recoverable Silver	$e^{(1.72\ (\ln\ Hardness)\ -\ 6.59)}$	
Total Recoverable Zinc	$e^{(0.8473\ (\ln\ Hardness)\ +\ 0.884)}$	$e^{(0.8473\ (\ln\ Hardness)\ +\ 0.884)}$

Hardness (as mg/l $CaCO_3$)

Zone Initial Dilution (ZID) $H_{RW} + [H_T + H_{RW}]/ZID$

Mixing Zone $[(Q_{RW7Q10})(MZ)(H_{RW}) + (Q_T)(H_T)]/[(QRW7Q10)(MZ)+(QT)]$

Total Ammonia Criteria

Chronic - applies state wide - unionzed criteria of 0.05 mg/l
Acute - applies to the Ohio River (ORSANCO Criteria)

$[0.05*(1+10^{(pka-pH)})]/1.2$ $pka=(0.0902+(2730/(273.1+T))$ T = Temperature ^oC

$[0.411/(1+10^{(7.204-pH)})]+[58.4/(1+10^{(pH-7.204)})]$

Bioaccumulative or Persistent

For new facilities after September 8, 2004 mixing zones shall not be granted for bioaccumulative or persistent pollutants of concern.

Mixing zones for bioaccumulative or persistent pollutants of concerned assigned prior to September 8, 2004 shall expire no later than September 8, 2014, unless the permittee agrees to expiration of the mixing zone prior to that date.

Therefore, the application of the more stringent criteria of Human Health Fish & Water Consumption, Human Health Fish Only Consumption, and Aquatic Life Chronic shall apply as end-of-pipe effluent limitations.

Antidegradation

If a new facility or an existing facility that will have a pollutant load increase, the effluent limits are halved unless the receiving stream is impaired or the permittee has demonstrated a negative socioeconomic or cost benefit analysis.

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Reasonable Potential Analysis

In establishing water quality based effluent conditions the Division of Water must determine if the pollutant concentrations in the discharge will cause, have the reasonable potential to cause, or contribute to an excursion of any water standard. The process by which the Division of Water makes this determination is known as a Reasonable Potential Analysis.

A Reasonable Potential Analysis is performed by first calculating the expected effluent limitations for those pollutants with water quality criteria. The calculated limits are then compared to the concentrations reported on the KPDES permit application and/or a summarization of the values reported on the Discharge Monitoring Report (DMRs) submitted during the term of the permit. This comparison is made by dividing the reported value by the calculated effluent limitation and converting to a percentage. The following criteria are used in determining how the pollutant will be addressed in the permit.

New Permits or New Pollutants on Permit Renewals

If the reported concentration is less than 70% of the calculated effluent limit then no monitoring or limitations will be required.

If the reported concentration is equal to or greater than 70% but less than 90% of the calculated effluent limit then monitoring will be required.

If the reported concentration is equal to or greater than 90% and the number of analysis reported on the KPDES permit application is less than 12 then monitoring will be required.

If the reported concentration is equal to or greater than 90% and the number of analysis reported on the KPDES permit application is equal or greater than 12 then an effluent limitation will be required.

Permit Renewals - Existing Pollutants

If the reported concentration is less than 70% of the calculated effluent limit then and the source of the reported concentration was the DMRs for that facility and there were more than 12 DMRs utilized to determine the reported concentrations then the pollutant will be removed from the permit.

If the reported concentration is equal to or greater than 70% but less than 90% of the calculated effluent limit then monitoring will be required.

If the reported concentration is equal to or greater than 90% then an effluent limitation will be required.

In all cases, the Division of Water still may exercise its Best Professional Judgment in the implementation of the results.

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
Chloride	16887006	0.000000	27.600000	600.000000	1,200.000000	0.00%	2.30%	Application	1	None	None	Chronic	Acute
Total Residual Chlorine		0.012700	0.019200	0.011000	0.019000	115.45%	101.05%	DMR	48	Limit	Limit	Chronic	Acute
Color		0.000000	0.000000	67.080319	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Fluoride		0.000000	0.000000	1,788.808511	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Nitrate-Nitrite (as N)	14797558	0.000000	2.400000	8,944.042553	NA	0.00%	0.00%	Application	1	None	None	HH DWS	NA
Total Alpha		0.000000	0.000000	NA	15.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Total Beta		0.000000	0.000000	NA	50.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Total Radium		0.000000	0.000000	NA	5.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Sulfate (as SO4)		0.000000	40.400000	223,601.063830	NA	0.00%	0.00%	Application	1	None	None	HH DWS	NA
Surfactants		0.000000	0.059300	447.202128	NA	0.00%	0.00%	Application	1	None	None	HH DWS	NA
Total Recoverable Barium	7440393	0.000000	0.029000	894.404255	NA	0.00%	0.00%	Application	1	None	None	HH DWS	NA
Total Recoverable Iron	7439896	0.000000	0.074000	1.000000	4.000000	0.00%	1.85%	Application	1	None	None	Chronic	Acute
Total Recoverable Antimony	7440360	0.000000	0.000000	0.640000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Total Recoverable Arsenic	7440382	0.000000	0.000000	0.150000	0.340000	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Total Recoverable Beryllium	7440417	0.000000	0.000000	3.577617	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Total Recoverable Cadmium	7440439	0.000000	0.000000	0.000477	0.004645	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Total Recoverable Chromium	7440439	0.002000	0.009000	89.440426	NA	0.00%	0.00%	Application	25	None	None	HH DWS	NA
Total Recoverable Copper	7440508	0.000000	0.000000	0.017943	0.028795	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Total Recoverable Lead	7439921	0.000000	0.000000	0.008430	0.216334	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Total Recoverable Mercury	7439976	0.000000	0.000000	0.000051	0.001700	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Total Recoverable Nickel	7440020	0.000000	0.000000	0.099679	0.896555	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Total Recoverable Selenium	7782492	0.000000	0.000000	0.005000	0.020000	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Total Recoverable Silver	7440224	0.000000	0.000000	NA	0.014119	0.00%	0.00%	No Data	0	None	None	NA	Acute
Total Recoverable Thallium	7440280	0.000000	0.000000	0.006300	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Total Recoverable Zinc	7440666	0.056000	2.420000	0.229188	0.229188	24.43%	1055.90%	Application	25	None	Limit	Chronic	Acute
Free Cyanide	57125	0.000000	0.000000	0.005200	0.022000	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
2,3,7,8 Tetrachlorodibenzo P Dioxin	1746016	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Acrolein	107028	0.000000	0.000000	0.290000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Acrylonitrile	107131	0.000000	0.000000	0.000250	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzene	71432	0.000000	0.000000	0.051000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bromoform	75252	0.000000	0.000000	0.140000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Carbon Tetrachloride	56235	0.000000	0.000000	0.001600	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chlorobenzene	108907	0.000000	0.000000	21.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chlorodibromomethane	124481	0.000000	0.000000	0.013000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chloroform	67663	0.000000	0.000000	0.470000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Dichlorobromomethane	75274	0.000000	0.000000	0.017000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2-Dichloroethane	107062	0.000000	0.000000	0.037000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,1-Dichloroethylene	75354	0.000000	0.000000	0.003200	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2-Dichloropropane	78875	0.000000	0.000000	0.015000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,3-Dichloropropene	542756	0.000000	0.000000	1.700000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Ethylbenzene	100414	0.000000	0.000000	29.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Methyl Bromide	74839	0.000000	0.000000	1.500000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Methylene Chloride	75092	0.000000	0.000000	0.590000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,1,2,2-Tetrachloroethane	79345	0.000000	0.000000	0.004000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Tetrachloroethylene	127184	0.000000	0.000000	0.003300	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Toluene	108883	0.000000	0.000000	200.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2-Trans-Dichloroethylene	156605	0.000000	0.000000	140.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,1,1-Trichloroethane	71556	0.000000	0.000000	178.880851	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
1,1,2-Trichloroethane	79005	0.000000	0.000000	0.016000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Trichloroethylene	79016	0.000000	0.000000	0.030000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
Vinyl Chloride	75014	0.000000	0.000000	0.530000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2-Chlorophenol	95578	0.000000	0.000000	0.150000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4-Dichlorophenol	120832	0.000000	0.000000	0.290000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4-Dimethylphenol	105679	0.000000	0.000000	0.850000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4-Dinitrophenol	51285	0.000000	0.000000	5.300000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Pentachlorophenol	87865	0.000000	0.000000	0.003000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Phenol	108952	0.000000	0.000000	1,700.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4,6-Trichlorophenol	88062	0.000000	0.000000	0.002400	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Acenaphthene	83329	0.000000	0.000000	0.990000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Anthracene	120127	0.000000	0.000000	40.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzidine	92875	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzo(a)anthracene	56553	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzo(a)pyrene	50328	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzo(k)fluoranthene	205992	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bis(2-chloroisopropyl)ether	108601	0.000000	0.000000	65.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bis(2-ethylhexyl)phthalate	117817	0.000000	0.000000	0.002200	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Butylbenzyl phthalate	85687	0.000000	0.000000	1.900000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2-Chloronaphthalene	91587	0.000000	0.000000	1.600000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chrysene	218019	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Dibenzo(a,h)anthracene	53703	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2-Dichlorobenzene	95501	0.000000	0.000000	17.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,3-Dichlorobenzene	541731	0.000000	0.000000	0.960000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,4-Dichlorobenzene	106467	0.000000	0.000000	2.600000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
3,3-Dichlorobenzidine	91941	0.000000	0.000000	0.000028	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Diethyl phthalate	84662	0.000000	0.000000	44.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Dimethyl phthalate	131113	0.000000	0.000000	1,100.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Di-n-butyl phthalate	84742	0.000000	0.000000	4.500000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4-Dinitrotoluene	121142	0.000000	0.000000	0.003400	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2-Diphenylhydrazine	122667	0.000000	0.000000	0.000200	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Fluoranthene	206440	0.000000	0.000000	0.140000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Fluorene	86737	0.000000	0.000000	5.300000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Hexachlorobenzene	118741	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Hexachlorobutadiene	87683	0.000000	0.000000	0.018000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Hexachlorocyclopentadiene	77474	0.000000	0.000000	17.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Hexachloroethane	67721	0.000000	0.000000	0.003300	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Ideno(1,2,3-cd)pyrene	193395	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Isophorone	78591	0.000000	0.000000	0.960000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Nitrobenzene	98953	0.000000	0.000000	0.690000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
N-Nitrosodimethylamine	62759	0.000000	0.000000	0.003000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
N-Nitrosodi-n-Propylamine	621647	0.000000	0.000000	0.000510	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
N-Nitrosodiphenylamine	86306	0.000000	0.000000	0.006000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Pyrene	129000	0.000000	0.000000	4.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2,4-Trichlorobenzene	120821	0.000000	0.000000	0.940000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Aldrin	309002	0.000000	0.000000	0.000000	0.003000	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
alpha-BHC	319846	0.000000	0.000000	0.000005	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Beta-BHC	319857	0.000000	0.000000	0.000017	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
gamma-BHC (Lindane)	58899	0.000000	0.000000	0.000063	0.000950	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Chlordane	57749	0.000000	0.000000	0.000001	0.002400	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
4,4'-DDT	50293	0.000000	0.000000	0.000000	0.001100	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
4,4'-DDE	72559	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
4,4'-DDD	72548	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Dieldrin	60571	0.000000	0.000000	0.000000	0.000240	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Alpha-Endosulfan	959988	0.000000	0.000000	0.000056	0.000220	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Beta-Endosulfan	33213659	0.000000	0.000000	0.000056	0.000220	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Endosulfan sulfate	1031078	0.000000	0.000000	0.089000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Endrin	72208	0.000000	0.000000	0.000036	0.000086	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Endrin aldehyde	7421934	0.000000	0.000000	0.000300	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Heptachlor	76448	0.000000	0.000000	0.000000	0.000520	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Heptachlor epoxide	1024573	0.000000	0.000000	0.000000	0.000520	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Polychlorinated Biphenyls (PCBs)		0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Toxaphene	8001352	0.000000	0.000000	0.000000	0.000730	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
1,2,4,5-Tetrachlorobenzene	95943	0.000000	0.000000	0.001100	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2-methyl-4,6-dinitrophenol	534521	0.000000	0.000000	0.280000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4-D	94757	0.000000	0.000000	312.809596	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2,4,5-TP (Silvex)	93721	0.000000	0.000000	8.944043	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2,4,5-trichlorophenol	95954	0.000000	0.000000	3.600000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Asbestos	1332214	0.000000	0.000000	31,280,959.574468	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Benzo(b)fluoranthene	205992	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bis(2-chloroethyl)ether	111444	0.000000	0.000000	0.000530	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bis(chloromethyl)ether	542881	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chloropyrifos	2921882	0.000000	0.000000	0.000041	0.000083	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Chromium (III)	16065831	0.000000	0.000000	0.161314	3.375007	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Chromium (VI)	18540299	0.000000	0.000000	0.011000	0.016000	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Demeton	8065483	0.000000	0.000000	0.000100	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Dinitrophenols	25550587	0.000000	0.000000	5.300000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Guthion	86500	0.000000	0.000000	0.000010	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Hexachlorocyclo-hexane-Technical	319868	0.000000	0.000000	0.000041	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Hydrogen Sulfide, Undissociated	7783064	0.000000	0.000000	0.002000	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Malathion	121755	0.000000	0.000000	0.000100	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Methoxychlor	72435	0.000000	0.000000	0.000030	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Mirex	2385855	0.000000	0.000000	0.000001	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Nitrosamines, Other		0.000000	0.000000	0.000716	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
N-Nitrosodibutylamine	924163	0.000000	0.000000	0.000220	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
N-Nitrosodiethylamine	55185	0.000000	0.000000	0.001240	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
N-Nitrosopyrrolidine	930552	0.000000	0.000000	0.034000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Parathion	56382	0.000000	0.000000	0.000013	0.000065	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Pentachlorobenzene	608935	0.000000	0.000000	0.001500	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Phthalate esters		0.000000	0.000000	0.003000	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Total Dissolved Solids		0.000000	0.000000	670,803.191489	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Tritium		0.000000	0.000000	NA	20,000.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Total Strontium-90		0.000000	0.000000	NA	8.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Uranium		0.000000	0.000000	NA	0.030000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Total Ammonia		0.000000	0.000000	3.360911	19.890204	0.00%	0.00%	No Data	0	None	None	Chronic	Acute

Hardness	Chronic	Acute
Metal limitations are developed using the mixed hardness of the effluent and receiving waters	215.0	215.0

Toxicity

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum

Type of Test	Maximum	Units	Justification	Percent Effluent
Chronic	1.00	TUc	Chronic	100.00%

KPDES

KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT

PERMIT NO.: KY0002666

AUTHORIZATION TO DISCHARGE UNDER THE KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

Pursuant to Authority in KRS 224,

Commonwealth Aluminum Lewisport, LLC
1372 State Road 1957
Lewisport, Kentucky 42351

is authorized to discharge from a facility located at

Commonwealth Aluminum Lewisport, LLC
1372 State Road 1957
Lewisport, Hancock County, Kentucky

to receiving waters named

Outfall 001 discharges to Thrasher Creek at the following coordinates: N 37° 56′ 40″, W 86° 51′ 15″ (mile point 2.6).

Outfalls 002 through 008 and 010 through 012 are internal discharges to Outfall 001.

in accordance with effluent limitations, monitoring requirements, and other conditions set forth in PARTS I, II, III, IV, and V. The permit consists of this cover sheet, and PART I 3 pages, PART II 1 page, PART III 2 pages, PART IV 3, and PART V 3 pages.

This permit shall become effective on

This permit and the authorization to discharge shall expire at midnight,

Date Signed

Sandra L. Gruzesky, Director
Division of Water

A1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the term of this permit, the permittee is authorized to discharge from Outfall serial number: 001 - No additional treatment is provided to the combined wastewaters of coil coating (Internal Outfall 002), non-contact cooling (Internall Outfalls 003, 004, 005, 010, and 011), storm water runoff (Internal Outfall 006), sanitary (Internal Outfall 007), direct chill casting (Internal Outfall 008), and direct chill casting and hot line waters (Internal Outfall 012).

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS (lbs/day)		DISCHARGE LIMITATIONS Other Units (Specify)		MONITORING REQUIREMENTS	
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Measurement Frequency	Sample Type
Flow (MGD)	N/A	N/A	Report	Report	2/Month	Instantaneous
Precipitation (inches)	N/A	N/A	Report	Report	Continuous	Recorder
Total Suspended Solids	1,001	1,840	N/A	N/A	2/Month	24-hour Composite
Oil & Grease	238	453	N/A	N/A	2/Month	Grab
Total Recoverable Chromium	0.92	2.26	N/A	N/A	2/Month	24-hour Composite
Total Cyanide	0.62	1.50	N/A	N/A	2/Month	Grab
Total Recoverable Zinc	3.11	7.42	N/A	N/A	2/Month	24-hour Composite
Total Recoverable Aluminum	15.86	32.16	N/A	N/A	2/Month	24-hour Composite
Hardness (as mg/l CaCO3)	N/A	N/A	Report	Report	2/Month	Grab
Chronic Toxicity (TUc)	N/A	N/A	N/A	1.0	1/Quarter	24-hour Composite*
Total Residual Chlorine (mg/l)	0.011	0.019	N/A	N/A	2/Month	Grab
Temperature (^{o}C)	N/A	31.7	N/A	N/A	2/Month	Grab

The pH of the effluent shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 2/Month by Grab sample.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: nearest accessible point prior to discharge to or mixing with the receiving waters or wastestreams from other outfalls.

There shall be no discharge of floating solids or visible foam or sheen in other than trace amounts.
*Chronic Toxicity shall be monitored once per quarter by a minimum of three (3) 24-hour composite samples collected every other day.

A2. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the term of this permit, the permittee is authorized to discharge from Outfall serial number: 007 (Internall Outfall) – The sanitary wastewaters from the Wastewater Treatment Facility are treated by grinding, activated sludge, filtration, and chlorine disinfection prior to commingling with the wastewaters of Outfall 001.

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS (lbs/day)		DISCHARGE LIMITATIONS Other Units (Specify)		MONITORING REQUIREMENTS	
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Measurement Frequency	Sample Type
Flow (MGD)	N/A	N/A	Report	Report	1/Month	Instantaneous
$CBOD_5$ (mg/l)	N/A	N/A	30	45	1/Month	24-hour Composite
Total Suspended Solids (mg/l)	N/A	N/A	30	45	1/Month	24-hour Composite
Total Residual Chlorine (mg/l)	N/A	N/A	N/A	0.5 (min)	1/Month	Grab

There shall be no discharge of floating solids or visible foam or sheen in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: nearest accessible point prior to discharge to or mixing with the receiving waters or wastestreams from other outfalls.

The abbreviation N/A means Not Applicable.

The abbreviation $CBOD_5$ means Carbonaceous Biochemical Oxygen Demand, 5-day.

B. Schedule of Compliance

The permittee shall achieve compliance with all requirements on the effective date of this permit or as specified by the permit.

STANDARD CONDITIONS FOR KPDES PERMIT

The permittee is also advised that all KPDES permit conditions in KPDES Regulation 401 KAR 5:065, Section 1 will apply to all discharges authorized by this permit.

This permit has been issued under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal, and local agencies.

It is the responsibility of the permittee to demonstrate compliance with permit parameter limitations by utilization of sufficiently sensitive analytical methods.

PART III

OTHER REQUIREMENTS

A. Reporting of Monitoring Results

Monitoring results obtained during each monitoring period must be reported on a preprinted Discharge Monitoring Report (DMR) Form that will be mailed to you. The completed DMR for each monitoring period must be sent to the Division of Water at the address listed below (with a copy to the appropriate Regional Office) postmarked no later than the 28th day of the month following the monitoring period for which monitoring results were obtained.

Division of Water
Madisonville Regional Office
625 Hospital Drive
Madisonville, Kentucky 42431
ATTN: Supervisor

Energy & Environment Cabinet
Dept. for Environmental Protection
Division of Water/SWP Branch
200 Fair Oaks Lane
Frankfort, Kentucky 40601

B. Reopener Clause

This permit shall be modified, or alternatively revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under 401 KAR 5:050 through 5:086, if the effluent standard or limitation so issued or approved:

1. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

2. Controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of KRS Chapter 224 when applicable.

C. Cooling Water Additives, FIFRA, and Mollusk Control

The discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) in cooling water which ultimately may be released to the waters of the Commonwealth is prohibited, except Herbicides, unless specifically identified and authorized by the KPDES permit. In the event the permittee needs to use a biocide or chemical not previously reported for mollusk control or other purpose, the permittee shall submit sufficient information, a minimum of thirty (30) days prior to the commencement of use of said biocides or chemicals, to the Division of Water for review and establishment of appropriate control parameters. Such information requirements shall include:

1. Name and general composition of biocide or chemical,
2. Any and all aquatic organism toxicity data,
3. Quantities to be used,
4. Frequencies of use,
5. Proposed discharge concentrations, and
6. EPA registration number, if applicable.

D. Outfall Signage

The permittee shall post a permanent marker at all discharge locations and/or monitoring points. The marker shall be at least 2 feet by 2 feet in size and a minimum of 3 feet above ground level with the Permittee Name and KPDES permit and outfall numbers in 2 inch letters. For internal monitoring points the marker shall be of sufficient size to include the outfall number in 2 inch letters and shall be posted as near as possible to the actual sampling location.

PART IV

BEST MANAGEMENT PRACTICES

SECTION A. GENERAL CONDITIONS

1. Applicability

These conditions apply to all permittees who use, manufacture, store, handle, or discharge any pollutant listed as: (1) toxic under Section 307(a)(1) of the Clean Water Act; (2) oil, as defined in Section 311(a)(1) of the Act; (3) any pollutant listed as hazardous under Section 311 of the Act; or (4) is defined as a pollutant pursuant to KRS 224.01-010(35) and who have ancillary manufacturing operations which could result in (1) the release of a hazardous substance, pollutant, or contaminant, or (2) an environmental emergency, as defined in KRS 224.01-400, as amended, or any regulation promulgated pursuant thereto (hereinafter, the "BMP pollutants"). These operations include material storage areas; plant site runoff; in-plant transfer, process and material handling areas; loading and unloading operations, and sludge and waste disposal areas.

2. BMP Plan

The permittee shall develop and implement a Best Management Practices (BMP) plan consistent with 401 KAR 5:065, Section 2(10) pursuant to KRS 224.70-110, which prevents or minimizes the potential for the release of "BMP pollutants" from ancillary activities through plant site runoff; spillage or leaks, sludge or waste disposal; or drainage from raw material storage. A Best Management Practices (BMP) plan will be prepared by the permittee unless the permittee can demonstrate through the submission of a BMP outline that the elements and intent of the BMP have been fulfilled through the use of existing plans such as the Spill Prevention Control and Countermeasure (SPCC) plans, contingency plans, and other applicable documents.

3. Implementation

If this is the first time for the BMP requirement, then the plan shall be developed and submitted to the Division of Water within 90 days of the effective date of the permit. Implementation shall be within 180 days of that submission. For permit renewals the plan in effect at the time of permit reissuance shall remain in effect. Modifications to the plan as a result of ineffectiveness or plan changes to the facility shall be submitted to the Division of Water and implemented as soon as possible.

4. General Requirements

The BMP plan shall:

a. Be documented in narrative form, and shall include any necessary plot plans, drawings, or maps.

b. Establish specific objectives for the control of toxic and hazardous pollutants.

(1) Each facility component or system shall be examined for its potential for causing a release of "BMP pollutants" due to equipment failure, improper operation, natural phenomena such as rain or snowfall, etc.

(2) Where experience indicates a reasonable potential for equipment failure (e.g., a tank overflow or leakage), natural condition (e.g., precipitation), or other circumstances which could result in a release of "BMP pollutants," the plan should include a prediction of the direction, rate of flow, and total quantity of the pollutants which could be released from the facility as result of each condition or circumstance.

c. Establish specific Best Management Practices to meet the objectives identified under paragraph b of this section, addressing each component or system capable of causing a release of "BMP pollutants."

d. Include any special conditions established in part b of this section.

e. Be reviewed by plant engineering staff and the plant manager.

5. Specific Requirements

The plan shall be consistent with the general guidance contained in the publication entitled "NPDES Best Management Practices Guidance Document," and shall include the following baseline BMPs as a minimum.

a. BMP Committee
b. Reporting of BMP Incidents
c. Risk Identification and Assessment
d. Employee Training
e. Inspections and Records
f. Preventive Maintenance
g. Good Housekeeping
h. Materials Compatibility
i. Security
j. Materials Inventory

6. SPCC Plans

The BMP plan may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans under Section 311 of the Act and 40 CFR Part 151, and may incorporate any part of such plans into the BMP plan by reference.

7. Hazardous Waste Management

The permittee shall assure the proper management of solid and hazardous waste in accordance with the regulations promulgated under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1978 (RCRA) (40 U.S.C. 6901 et seq.) Management practices required under RCRA regulations shall be referenced in the BMP plan.

8. Documentation

The permittee shall maintain a description of the BMP plan at the facility and shall make the plan available upon request to NREPC personnel. Initial copies and modifications thereof shall be sent to the following addresses when required by Section 3:

Division of Water
Madisonville Regional Office
625 Hospital Drive
Madisonville, Kentucky 42431
ATTN: Supervisor

Energy & Environment Cabinet
Dept. for Environmental Protection
Division of Water/SWP Branch
200 Fair Oaks Lane
Frankfort, Kentucky 40601

9. BMP Plan Modification

The permittee shall amend the BMP plan whenever there is a change in the facility or change in the operation of the facility which materially increases the potential for the ancillary activities to result in the release of "BMP pollutants."

10. Modification for Ineffectiveness

If the BMP plan proves to be ineffective in achieving the general objective of preventing the release of "BMP pollutants," then the specific objectives and requirements under paragraphs b and c of Section 4, the permit, and/or the BMP plan shall be subject to modification to incorporate revised BMP requirements. If at any time following the issuance of this permit the BMP plan is found to be inadequate pursuant to a state or federal site inspection or plan review, the plan shall be modified to incorporate such changes necessary to resolve the concerns.

SECTION B. SPECIFIC CONDITIONS

Periodically Discharged Wastewaters Not Specifically Covered By Effluent Conditions

The permittee shall include in this BMP plan procedures and controls necessary for the handling of periodically discharged wastewaters such as intake screen backwash, meter calibration, fire protection, hydrostatic testing water, water associated with demolition projects, etc.

PART V

BIOMONITORING – CHRONIC CONCERNS

In accordance with PART I of this permit, the permittee shall initiate, within 30 days of the effective date of this permit, or continue the series of tests described below to evaluate wastewater toxicity of the discharge from Outfall 001.

TEST REQUIREMENTS

The permittee shall perform one short-term static-renewal fathead minnow (Pimephales promelas) growth test and one short-term static-renewal water flea (Ceriodaphnia dubia) life-cycle test. Tests shall be performed on a series of grab samples collected as described below. In addition to use of a control, effluent concentrations for the tests must include the permitted limit, (i.e., 100% effluent) and at least four additional effluent concentrations. For a permit limit of 100% effluent, test concentrations shall be 20%, 40%, 60%, 80% and 100%. If the permit limit is less than 100% effluent and greater than or equal to 75% effluent, the test concentrations shall include the permitted limit, two concentrations below the limit that are based on a 0.5 dilution factor, and two concentrations above the limit (to include 100% and mid-point between the permit limit and 100%). If the permit limit is less than 75% effluent, test concentrations shall include the permit limit concentration, two concentrations below the limit based on a 0.5 dilution factor, and two concentrations above the limit based on a 0.5 dilution factor if possible, otherwise to include 100% and mid-point between the permit limit and 100% . Selection of different effluent concentrations must be approved by the Division prior to testing. Testing of the effluent shall be initiated within 36 hours of completing each grab sample. Controls shall be tested concurrently with effluent testing using synthetic water. The analysis will be deemed reasonable and good only if the minimum control requirements are met, (i.e. For the Ceriodaphnia test: at least 80% survival of all control organisms and an average of 15 or more young per surviving female in the control solutions; and 60% of surviving control females must produce three broods. For the fathead minnow test: at least 80% survival in controls and the average dry weight per surviving organism in control chambers equals or exceeds 0.25 mg. Any test that does not meet the control acceptability criteria shall be repeated as soon as practicable within the monitoring period (i.e. monthly or quarterly). Noncompliance with the toxicity limit will be demonstrated if the IC_{25} (inhibition concentration) for reproduction or growth is less than 100% effluent

Tests shall be conducted on both species at the frequency specified in PART I of this permit.

A minimum of three grab samples shall be collected at a frequency of one every other day. For example, the first sample would be used for test initiation on day 1 and for test solution renewal on day 2. The second sample would be used for test solution renewal on days 3 and 4. The third sample would be used for test solution renewal on days 5, 6, and 7. Each 24 hour composite shall be collected using a refrigerated automatic sampler. The lapsed time from collection of the sample and its first use for test initiation or for test solution renewal shall not exceed 36 hours.

PART V – BIOMONITORING - CHRONIC CONCERNS

TEST REQUIREMENTS

Grab samples shall be refrigerated and maintained at not greater than 6°C during collection, storage, transport and until used in the test by the laboratory.

If after at least six consecutive toxicity tests, it can be determined that Ceriodaphina dubia or the Fathead minnow is more sensitive and all tests have passed, a request for testing with only the most sensitive species can be submitted to the Division. Upon approval, that most sensitive species may be considered as representative and all subsequent compliance tests can be conducted using only that species unless directed at any time by the Division to change or revert to both.

REPORTING REQUIREMENTS

Results of all toxicity tests conducted with any species shall be reported according to the most recent format provided by the Division of Water. Notification of failed test shall be made to the Division's Water Quality Branch within five days of test completion. Test reports shall be submitted to the Division's Water Quality Branch within thirty days of completion.

Chronic Toxicity

If noncompliance with the toxicity limit occurs in an initial test, (i.e., the IC_{25} for reproduction of water fleas or growth of minnows is less than **(percent)**% effluent), the permittee must repeat the test using a new set of three grab samples. Sampling must be initiated within 15 days of completing the failed test. The second round of testing shall include both species unless approved for only the most sensitive species by the Division. Results of the second round of testing will be used to evaluate the possible need for a Toxicity Reduction Evaluation (TRE).

If the second round of testing also demonstrates noncompliance with the toxicity limit, the permittee will be required to perform accelerated testing as specified in the following paragraphs.

Complete four additional rounds of testing to evaluate the frequency and degree of toxicity within 60 days of completing the second round of failed testing. Results of the initial and second rounds of testing specified above, plus the four additional rounds of testing will be used in deciding if a TRE shall be required.

If results from any two of the six rounds of testing show a significant noncompliance with the chronic limit (i.e., $\geq$1.2 times the TU_c), or results from any four of the six tests show chronic toxicity (as defined in 1.A), a TRE will be required.

The permittee shall provide written notification to the Division of Water within five (5) days of completing accelerated testing stating that: (1) toxicity persisted and that a TRE will be initiated; or (2) that toxicity did not persist and the normal testing will resume.

Should toxicity prove not to be persistent during the accelerated testing period, but reoccur within 12 months of the initial failure at a level • 1.2 times the TU_c, then a TRE shall be required.

PART V – BIOMONITORING - CHRONIC CONCERNS

TOXICITY REDUCTION EVALUATION (TRE)

Having determined that a TRE is required, the permittee shall initiate &/or continue at least monthly testing with both species until such time as a specific TRE plan is approved by the Division. A TRE plan shall be developed by the permittee and submitted to the Division within thirty days of determining a TRE is required. The plan shall be developed in accordance with the most recent EPA and Division guidance. Questions regarding this process may be submitted to the Division's Water Quality Branch.

The TRE plan shall include Toxic Identification Evaluation (TIE) procedures, treatability studies, and evaluations of: chemical usage including changes in types, handling and suppliers; operational and process procedures; housekeeping and maintenance activities; and raw materials. The TRE plan will establish an implementation schedule to begin immediately upon approval by the Division, to have duration of at least six months, and not to exceed 24 months. The implementation schedule shall include quarterly progress reports being submitted to the Division's Water Quality Branch, due the last day of the month following each calendar quarter.

Upon completion of the TRE, the permittee shall submit a final report detailing the findings of the TRE and actions taken or to be taken to prevent the reoccurrence of toxicity. This final report shall include: the toxicant(s), if any are identified; treatment options; operational changes; and the proposed resolutions including an implementation schedule not to exceed 180 days.

Should the permittee determine the toxicant(s) and/or a workable treatment prior to the planned conclusion of the TRE, the permittee will notify the Division's Water Quality Branch within five days of making that determination and take appropriate actions to implement the solution within 180 days of that notification.

TEST METHODS

All test organisms, procedures and quality assurance criteria used shall be in accordance with Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (Fourth Edition), EPA-821-R-02-013, the most recent edition of this publication, or as approved in advance by the Division of Water.

Toxicity testing for compliance to KPDES discharge limits shall be performed by a laboratory approved by the Division of Water to conduct the required toxicity tests. Within each toxicity report to the Division of Water, the permittee must demonstrate successful performance of reference toxicant testing by the laboratory that conducts their effluent toxicity tests. Within 30 days prior to initiating an effluent toxicity test, a reference toxicant test must be completed for the method used; alternatively, the reference toxicant test may be run concurrent with the effluent toxicity test. In addition, for each test method, at least 5 acceptable reference toxicant tests must be completed by the laboratory prior to performing the effluent toxicity test. A control chart including the most recent reference toxicant test endpoints for the effluent test method (minimum of 5, up to 20 if available) shall be part of the report.